ATTACHMENT 9

CONTAINER MANAGEMENT

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1.0 Containers: R315-8-9.1; 40 CFR 264.170

Container Management, General:

Records will be maintained at the facility which will allow access to information regarding wastes, and document the movement of wastes through the facility from receipt, to storage, to treatment and/or to shipment off-site. The records will be accessed by a unique identifier assigned to each waste container.

Container Management Building, Units 101, 102:

The majority of containers received at the Safety-Kleen Clive facility will be stored, prior to processing, in the Container Management Building (CMB), Unit 101, Storage; and Unit 102, Processing; as shown on Dwg. 43-10-4-J01 (Sheets 1 and 2, respectively.) (Unit 103, Organic Decant Storage which receives liquids decanted from containers is shown on Dwg. 43-10-4-J04). The main exceptions to this are large containers. These are discussed under the headings of Intermodal Unit, Thaw Unit, Special Handling Bay, Containerized Bulk Solids Storage Units, and Rail/Truck Tanker Transfer Unit. Another exception relates to containers of medical wastes. These wastes will not be stored in the CMB or in any other units at the facility, but may be offloaded and moved through the CMB en-route to the ram feeder mechanism of the Burner Kiln. These wastes will be incinerated

as soon as is practical after receipt, and with precedence over hazardous wastes. If the medical waste cannot be incinerated upon arrival at the facility, then it will be stored in the transport vehicle (e.g., refrigerated trucks) in which it arrived until incineration is possible.

The CMB is provided with three loading/unloading bays for the unloading and transfer of containerized waste, primarily contained in fifty-five (55) gallon drums, and a fourth bay (associated with unit 102) used primarily for transfer of containers within the facility. Each of the three Unit 101 loading/unloading bays can handle two (2) trucks. The Unit 101 loading/unloading bays are constructed with a nine (9) inch reinforced concrete slab sloping 1/3 inch per foot from the north edge of the bay to the edge of a spill containment sump located at the south end of the bay. The bays also have eight (8) inch thick concrete sidewalls tapering from the bay wall to the north edge of the bay.

The loading/unloading bays of Unit 101 are twenty eight (28) feet eight (8) inches wide by forty (40) feet deep and have spill containment sumps that are three (3) feet wide by three (3) feet six (6) inches deep by twenty (20) feet long. The spill

containment capacity of these sumps is 1,570 gallons each and the total spill containment capacity of these bays (including the sump and sloped floor capacities) is a minimum of 5,034 gallons each. A section through this bay is shown in Section B-B on Dwg. 43-10-4-J02 (sheet 1 of 2).

The loading bay at Unit 102 is twelve (12) feet wide by thirty-five (35) feet deep and has a spill containment sump that is three (3) feet six (6) inches wide by one (1) feet six (6) inches deep by eight (8) feet long. The spill containment capacity of this sump is approximately 314 gallons and the total spill containment capacity of this loading bay (including sump and sloped floor) is approximately 1,735 gallons. A section through this loading bay is shown in Section F-F on Dwg. 43-10-4-J01 Sheet 2 of 2. The operations which occur within unit 102 are discussed in detail in Appendix 4.

Seven (7) storage rooms are provided within the building for the storage of RCRA and TSCA regulated wastes, all similar in design and construction. Except for the common wall between Unit 101 and Unit 102, all interior and exterior walls are constructed of twelve (12) inch concrete block meeting the UL two (2) hour fire rating. The common wall between Unit 101 and Unit 102 is also

12" block, but is constructed to meet the requirements for a four (4) hour fire rating. Equipment doors are three (3) hour fire rated. Personnel access doors are 1-1/2 hour fire rated. Equipment doors are provided with fusible links and will automatically close in the event of fire. The building was designed to comply with the Uniform Building Code (UBC) and the appropriate sections of the National Fire Protection Association (NFPA) Code. Each storage room is provided with loading/unloading areas at both ends which provide maneuvering room for mobile equipment such as forklifts. Additional aisle space within storage room G provides mobile equipment with an alternative path of moving from one end of the building to the other.

The ventilation system of the main body of the CMB will provide a minimum of four (4) air changes per hour, per OSHA recommendations. This ventilation will be accomplished through two (2) axial roof ventilators and two (2) roof mounted air makeup units. Because containers will be kept closed except for inspection and sampling, VOC emissions will be minimal. That coupled with the large volumes of air being moved precludes the need for treatment of the exhaust gases for organic vapor removal.

Intermodal Unit 104

Large containers such as Inter-Modal Containers (IMCs) and Sludge Boxes may be delivered by road or rail. IMC and Sludge containers arriving by rail will be off-loaded at a dedicated unloading station. These large containers, (IMCs, gondolas, or Sludge Boxes) will be moved from the IMC unloading station to the truck sampling platform by a hoist truck specifically designed to load, unload and transport such containers. After sampling, the containers will be moved by truck to the appropriate bulk storage unit. No storage beyond ten (10) days is allowed for this unloading station. If containers cannot be unloaded within the ten (10) day period, the containers will be moved to a permitted storage area, such as the Thaw Unit. Wastes that have not been unloaded must be stored in a specific, clearly marked section of the permitted storage unit that will be used only for this purpose. All containers moved to this specific area will be entered into the inventory section of the operating record.

Thaw Unit 105

The Thaw Unit is designed to accommodate bulk loads, arriving by either rail or road which require warming to facilitate sampling or management.

The building is constructed of structural steel columns, enclosed with siding, and with a supported roof system. The approximate overall dimensions of the building are forty three (43) feet wide, 173 feet long and approximately twenty four (24) feet to eave height. The shed will be equipped with roll-up doors at each end to accommodate road and rail tankers, and trucks. Drawing 43-10-4-J10 Plan and Sections depicts the arrangement of this unit.

When necessary during cold weather conditions the Thaw Unit will be maintained at a temperature typically in the fifty (50) to eighty (80) Deg. F. range to slowly warm and thaw wastes to the point at which they can be safely removed from the container.

All bulk loads will remain closed, while in the unit, except when transferring waste from one container to another, sampling or inspecting.

Since containers will normally remain closed, there will be little, if any, release of vapors from them. When transfer operations occur, measures will be taken to reduce emissions from the operation. The ventilation system will provide a minimum of one (1) air change per hour, and will be exhausted to atmosphere.

The total volume of the Thaw Unit is approximately 178,600 cubic feet, and approximately 2,980 cubic feet per minute of exhaust is required to achieve one (1) air exchange per hour. The ventilation system will consist of two (2) 4,250 CFM gable mount fans and one 7,500 cfm air make-up fan.

Containerized Bulk Solids Storage Unit (Unit 106)

Safety-Kleen Clive has constructed and may use a Containerized Bulk Solids Storage Unit at the Clive Incineration Facility. This unit consists of three subunits designated Subunits 1, 2, and 3.

Large containers of waste are handled and stored in the Containerized Bulk Solids Storage Unit, Unit 106, prior to transfer for management (treatment, storage or disposal) at other on-site units or off-site permitted hazardous waste facilities. The waste stored and segregated in this unit is typically containerized solid and sludge type wastes that may contain free liquids. Waste containers handled and stored in the Containerized Bulk Solids Storage Unit will include intermodal containers (IMCs), sludge boxes, roll-off bins, van trailers with containers (e.g., 55 gallon drums), tanker trailers and other large containers. Also, "Sea Line" type containers may be placed

in Unit 106. These containers will typically be used to store smaller containers (e.g., 55-gallon drums) that contain waste.

The containers may be delivered to the Clive Incineration Facility by road or rail. Large containers arriving by rail will be off-loaded (e.g., via piggy packer, forklift, etc.) and transferred to the Containerized Bulk Solids Storage Unit for storage. Large containers arriving by road may be unloaded in Unit 106 or in other appropriate Units (such as Thaw Unit 105) and then transferred to Unit 106 or they may be stored in Unit 105.

The Containerized Bulk Solids Storage Unit will consist of three (3) rectangular storage areas or subunits. Secondary containment will consist of sloped floors (with perimeter curbs). The layout of Unit 106 is shown on Drawing 43-10-2-D61, sheet 4 (see Attachment 10).

Containers shall not be stacked more than three high in the enclosed portion of Subunit 1. Triple stacking may also occur in the unenclosed portion of Subunit 1, Subunit 2, and Subunit 3 provided that the permitted storage capacities of the unenclosed portions of Unit 106 are not exceeded. In addition, no

incompatible wastes, as determined by the Waste Analysis Plan, shall be stored within the enclosed portion of Subunit 1, the unenclosed portion of Subunit 1, Subunit 2 and Subunit 3.

The dimensions of Subunits 2 and 3 are forty-three (43) feet wide by 465 feet long each. The dimensions of Subunit 1 are forty-three (43) to forty-five (45) wide by 465 feet long. As mentioned above, a portion of the Subunit 1 will be enclosed to allow for the storage of TSCA[1] waste (RCRA waste may also be stored in this area).

The secondary containment system for each subunit will provide sufficient capacity to contain ten percent (10%) of the volume of the containers within the area, in accordance with requirements listed in 40 CFR 264.175(b)(3). The portions of Unit 106 not within an enclosure (Subunits 2 and 3 and a small portion of

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[1] Unit 106 will be used primarily to store RCRA waste. The TSCA waste storage area (enclosed portion of Subunit 1) is subject to approval by the Air, Radiation, and Toxics (ART) Division of the EPA. The RCRA waste storage areas (all areas of all subunits including the enclosed portion of Subunit 1) are subject to approval by the Utah DSHW. If the Unit 106 modification request is approved by the Utah DSHW and EPA ART, the facility will be able to store RCRA waste in all areas in all subunits. TSCA waste storage would be limited to the enclosed portion of Subunit 1 (southern portion of Subunit 1).

Subunit 1) will also have sufficient capacity to contain a 25-yr, 24-hr storm event (1.9 inches). Secondary containment capacity will be provided by curbs and sloped floors. These curbs will also serve to prevent the run-on of surface water, as required under 40 CFR 264.175(b)(4). Curbs will be placed completely around the perimeter of each subunit.

Subunit floors will be constructed of reinforced concrete equipped with waterstops and concrete coating, satisfying the requirements of 40 CFR 264.175(b)(1). Floors will be sloped (1% to 1.5% or greater - see drawing 43-10-2-D61, sheets 5 and 12 for details).

Special Handling Bay, Unit 538 and Rail/Truck Tanker Transfer Unit (located in Unit 535)

Two (2) other units at the facility fall under the container regulations. One of these is the Special Handling Bay from which wastes, after sampling and analysis, are directly introduced into the incineration system, rather than into a storage or treatment tank. This is done to simplify handling and avoid potential incompatibility problems such as possible polymerization reactions. The other unit is the Rail/Truck Tanker Transfer Unit which is located in Unit 535 and may be employed to transfer

wastes from rail tankers to trucks or vice-versa. A second bay within this unit may be used to unload rail tank cars to the Waste Fuel Tank Farm or employed to transfer wastes from rail tankers to trucks or vice-versa. This bay is described in Attachment 11. It is anticipated that any wastes which arrive by rail and require special handling will be stored in the Transfer Unit, and the waste would be transferred to a tank truck for treatment at the Special Handling Bay. Drawings 43-53-4-J07, Rail Tanker Unloading Plans and Sections, 43-53-2-J01, Rail Tanker Unloading Unit Details, 43-53-9-J02, Rail Tanker Unloading Unit P&ID, 43-53-4-J09 Special Handling Bay, Plan & Sections and 43-53-9-J03 Special Handling Bay P&ID, 43-53-2-J03 Special Handling Bay Details provide details on the design of these units. The location of these units is shown on Dwg. 43-01-1-J02, Clive Incinerator Facility Layout.

1.1 Containers with Free Liquids:

Safety-Kleen Clive expects to accept containers holding free liquids for storage and treatment. The requirements of 40 CFR Part 264, Subpart I and 40 CFR 270.15 will apply to the Container Management Building, Thaw Unit, Special Handling Bay, Containerized Bulk Solids Storage Unit (Unit 106), and Rail/Truck Tanker Transfer Unit.

The term "container" in this section will be employed to mean any portable device in which material is stored, transported, or otherwise handled. The term "drum" in this section will refer to a specific type of container, namely a fifty-five (55) gallon container.

The CMB will include unloading bays, receiving docks, segregated storage areas and a container processing area. The building is primarily designed to store wastes destined for incineration. However, some wastes which are intended for treatment or direct disposal at the Grassy or Grayback Mountain Facilities, or other facilities, may be temporarily stored in the building. Wastes manifested to a facility other than Safety-Kleen Clive will be stored in a marked area used only for that purpose. Wastes manifested to Safety-Kleen Clive, but requiring shipment to another TSDF will be manifested by Safety-Kleen Clive to the alternate TSDF, unless the alternate TSDF was specified on the manifest by the generator. The unloading bays and receiving docks may also be used for transferring rejected waste and waste manifested to another facility between transport vehicles.

Wastes destined for Grassy Mountain, which first arrive at the Container Management Unit, will be segregated from Safety-Kleen

Clive bound wastes. This will be accomplished either by transferring the wastes directly from the delivering vehicle into a second vehicle furnished to complete the delivery, or the wastes will be placed in the specifically identified area used only to store wastes which are manifested to Grassy Mountain or another facility. Wastes that were manifested to Safety-Kleen Clive, but are rejected, will be stored separately from wastes that have been accepted and those that are manifested to another facility by the generator. One of the containment bays will be assigned exclusively for the storage of these wastes until such time as the transfer and delivery to Grassy Mountain or other alternate facility can be completed; with the exception of wastes that have been rejected by the facility, such period will not exceed ten (10) days.

All containers will be unloaded within ten (10) days of arriving at the facility. If circumstances dictate that unloading will be delayed beyond this time period, the load will be moved into a permitted storage area. The containers that are not unloaded within 10 days of arrival will be stored in a separate area away from wastes that are in storage. The area will be clearly marked and will be used for no other purpose. An inventory of the waste

stored in this area will be maintained and will be part of the operating record.

1.1.1 Description of Containers: R315-8-9.2, 8.9.3; 40 CFR 264.171, 264.172.

Container Management Building Units 101, 102.

The CMB will be capable of receiving and processing containers, both new and used, of various materials of construction, sizes and capacities ranging upwards from one (1) pint. A majority of the containers are expected to be fifty-five (55) gallon drums with nominal dimensions of twenty-three (23) inches diameter by thirty-four (34) inches tall. Between 160 and 800 fifty-five (55) gallon containers are anticipated to be received and off-loaded on any given day. Other containers, such as paint cans, Marino bags, wooden cases and glass bottles may be received on some occasions. It is expected that the majority of the wastes will be solvent based wastes, with small quantities of acidic, caustic or reactive (Cyanides/Sulfides) wastes, and Lab Packs being received on occasion. Large containers, such as Intermodal Containers, Sludge Boxes, gondolas, and Truck and Rail Tankers will be managed at the Thaw Unit and Special Handling and Rail/Truck Tanker Transfer Units.

The facility handles several different types of Inter-Modal containers and roll-on / roll-off sludge boxes. The majority of these units have nominal dimensions of twenty (20) feet long, eight (8) feet wide and seven (7) feet high. The most common material of construction is carbon steel.

Containers accepted for storage, treatment and disposal will be required to be compatible with the wastes stored within them. Acceptable containers for acidic wastes include plastic, steel lined with plastic, or fiberglass containers. Acceptable containers for other wastes include steel, fiberglass, plastic, and steel lined with plastic containers, wooden cases and fiber sacks. Solvent wastes are frequently stored in closed top steel containers. A pH of less than seven (7) is normally considered an indication of acidity and greater than seven (7) of alkalinity. Corrosive wastes are defined as liquids with a pH less than two (2) or a pH greater than twelve point five (12.5). Caustic wastes may be stored in plastic containers or containers manufactured from carbon steel. Chloride containing wastes may be stored in polyethylene containers. Fiber sacks may be used to store, among other materials, contaminated debris or soils. New types of containers are routinely being developed and approved by the US DOT. Safety-Kleen Clive may use any container approved by

the US DOT for the transportation and storage of hazardous wastes.

Transporters of Hazardous Waste are required to meet the specifications in the US Department of Transportation regulations embodied in 49 CFR Part 178 Subparts A through J, 49 CFR 173 Subparts J through O, and the requirements of 49 CFR 172.101 with respect to design of containers. The responsibility for complying with the above requirements is primarily that of the Generator.

Protection against leakage from the use of unsuitable containers is provided through the requirements to provide secondary containment and perform regular and frequent inspections of the storage areas and containers. Safety-Kleen Clive has included an area on the Waste Profile Sheet where special handling and Safety Instructions can be furnished. After unloading, the types of containers received will be compared against the Waste Profile Sheet to determine if the specific type(s) of container(s) are suitable to contain the waste. Should it be determined that unsuitable containers have been utilized, the wastes will be transferred into suitable containers. The generator will be notified of the action and the facility will review the shipping

requirements for the wastes with the generator. All containers will be further checked for proper marking and labeling and for overall condition.

Any containers found to be inadequately or improperly labelled or deficient in the required information will be entered into the operating record and segregated until the deficiency can be resolved. There will be no fixed location where containers with labelling deficiencies will be stored. An area will be designated depending upon the number of containers with labelling deficiencies. This area will be identified (separated from other areas) by use of rope, tape, etc.

If the container is corroded, damaged, or leaking such that continued handling of the container would be hazardous, either the entire container will be placed in an overpack or the contents will be transferred to other storage units, which are in acceptable condition and constructed of materials compatible with the waste. If placed in replacement containers, all markings and labels will be duplicated or transferred to properly identify the contents of the replacement containers / overpacks.

Thaw Unit 105

Containers which may be stored in the Thaw Unit are typically expected to be road tankers of nominally 6,500 gallons capacity, rail tankers of nominally 20,000 gallon capacity, sludge boxes or Inter-Modal containers (IMCs) of nominally 20 cubic yards capacity. If a container in the Thaw Unit exhibits severe rusting, or it leaks or otherwise appears to be in poor condition, the contents of the container will be transferred to a container in good condition, or to a tank. Waste stored in the Thaw Unit will be compatible with the container in which it is stored. Waste that is transferred from a container in poor condition will be transferred to a container in good condition and compatible with the waste, or to a tank, the materials of construction and contents of which, will be compatible with the waste.

Containerized Bulk Solids Storage Unit (Unit 106)

The Containerized Bulk Solids Storage Unit is capable of receiving and storing large containers, such as sludge boxes, roll-off bins, tanker trailers and intermodal containers (IMCs). In addition, transport vehicles carrying smaller containers (i.e., those with a capacity of 55 gallons or greater) may be stored on Unit 106. Typical dimensions of the boxes to be stored are 8 feet wide, 20-24 feet long, and approximately 4-9 feet high

("Sea Line" containers may be as long as 33 feet). Containers will be covered to prevent the ingress of precipitation or the egress of waste. The most common material of construction will be carbon steel. Some of the containers may have their carbon steel tops replaced by aluminum, fiberglass, or a tarp to reduce dead weight. Containers accepted for storage in Unit 106 will be required to be compatible with the wastes stored within them.

If a container in Unit 106 exhibits severe rusting, irreparable leaks or otherwise appears to be in poor condition, the contents of the container will be transferred directly to a container that is in good condition and is compatible with the waste. This transfer operation will occur in the Spill Response Area (located on the northern end of Subunit 3) unless the container cannot be relocated due to its poor condition. When waste is transferred to replacement containers, all markings and labels will be duplicated or transferred to properly identify the contents of the replacement containers.

Rail/Truck Tanker Transfer (located in Unit 535)

The Rail/Truck Tanker Transfer Unit will be used to position a rail tanker of nominally 20,000 gallon capacity, while its contents are unloaded into a road tanker. If a container or

transport vehicle in the Rail/Truck Tanker Transfer Unit exhibits severe rusting, or it leaks or otherwise appears to be in poor condition, the contents of the container will be transferred to a container or transport vehicle in good condition. Waste stored in the Rail/Truck Tanker Transfer Unit will be compatible with the container in which it is stored. Waste that is transferred from a container or transport vehicle in poor condition will be transferred to a container or transport vehicle in good condition and compatible with the waste.

Special Handling Bay, Unit 538

The Special Handling Bay will be used to position a road tanker truck of nominally 6,500 gallon capacity (or an intermodal type container or containers of combined nominal capacity of 6,500 gallons or less), while the tanker/container contents are transferred to the incineration system. The Special Handling Bay will also be used for transferring gaseous waste to the incineration system. When one or more gas cylinders are present in Unit 538, only one other container (i.e., tanker truck or intermodal container) will be allowed in the unit at the same time.

1.1.2 Container Management Practices: R315-8-9.4; 40 CFR 264.173.

Container Management Building Units 101, 102.

The CMB is provided with three bays, each of which can accommodate two (2) trucks simultaneously. These bays will be referred to as "unloading bays" used for the unloading and loading of containerized waste, primarily contained in fifty-five (55) gallon drums. A fourth bay, adjacent to Unit 102, which can accommodate a single truck will be used primarily for transfer of containers within the facility. The Unit 101 unloading bays are constructed with an nine (9) inch reinforced concrete slab sloping 1/3 inch per foot from the north edge of the bay to the edge of a spill containment sump located at the south end of the bay. The bays also have eight (8) inch thick concrete sidewalls tapering from the bay wall to the north edge of the bay.

Palletized containers will be unloaded by industrial truck, such as a forklift or bobcat, equipped with forks. An industrial truck equipped with drum handling forks or a single container hand trolley will be employed to unload non-palletized shipments. Ramps will connect between the vehicle and the loading/unloading bay to assure safety in transferring wastes onto the bay. A typical ramp is shown on drawing 43-10-4-J02, Container

Management Sections, which provides an isometric view of the proposed dock leveler/ramp.

Drum inverting equipment and a small A frame hoist will be provided to facilitate such operations as the transfer of wastes from a damaged container to a clean container in good condition, the manual repackaging of containers, the transfer of leaking containers into overpacks, and the removal of individual drums from storage bays.

Containers will be handled within the CMB by means of hand trucks, or industrial trucks, roller type conveyors, and A frame hoists.

Containers will be unloaded from the delivery truck or rail. The containers will be processed through one of the two sampling stations located in rooms C and F where they will be visually inspected and checked for suitability for the wastes contained therein against the Waste Profile Sheet. Those containers selected for sampling and analysis will be opened and sampled. Once samples have been obtained, the containers will be re-closed. From the sampling stations, wastes which are in suitable containers will be placed directly into a storage bay in the

storage building. Should any container not be suitable for the wastes contained within it, the wastes will be transferred into a suitable container, along with all appropriate labeling and the Generator will be advised of the problem. If a waste shipment contains incompatible waste streams, the wastes will be placed in segregated storage areas.

Should a container of waste be subsequently discovered to be incompatible with the other wastes stored in a bay, it will be removed and placed in a different bay for accumulation with other wastes with which it is compatible.

Container Tracking Plan

The location of containers stored within Unit 101 will be recorded in the operating record by utilizing an alpha-numeric system of coordinates that will identify the storage area, storage block and level of each container in the CMB. The operating record will be maintained so that it will indicate accurately the waste identification number, the quantity of the waste, and the location of all wastes in the Container Management Building, as per R315-8-5.3 of the Utah Administrative Code (which incorporates 40 CFR 264.73(b)(1) and (2)). Each of the seven storage rooms in Unit 101 will be identified by a letter,

101-A, 101-B, 101-C, 101-D, 101-E, 101-F and 101-G. Within each room except 101-G, there are 6 storage bays. In room 101-G there are 4 storage units. Each side of the storage unit slopes towards a common sump and can accommodate a maximum of 20 drums single stacked or 38 drums, double stacked. Each side of each storage unit in each room will be assigned a number. For example room 101-A consists of 6 storage units, and will have 12 uniquely identified storage areas 101-A-1 through 101-A-12. Each storage area is broken down into five blocks. Each block equals the area of four 55-gallon or four overpack containers. They will be identified by the designation a, b, c, d, or e. To identify the stacking arrangement of drums, a letter "S" will be added to single stacked, or the bottom layer of drums and "D" to any second or double stacked layer of drums. Containers other than drums, which are limited to a maximum stacking height of 6 feet will be stacked on the bottom layer and by default be identified as single stacked. Storage in a working area would be identified by the room number followed by a letter which would indicate on which side of the room (four main compass points) the containers are located. The working areas would be further divided into units the size of four 55-gallon drums or four overpack containers, and have the designation a, b, c, etc.

An example of a typical location identifier used to identify the location of a container in a storage room is 101-E-9-a-D; indicating that the container was stored in Unit 101, Room E, Area 9, Block a, and is stacked above another container. A typical location identifier for a working area would take the form 101-B-N-b indicating that the container was stored in Block b of the North working area of Unit 101, Room B. Containers will not be double stacked in the working area. After containers are removed from Unit 101 for processing, the operating record will be updated to reflect container location on a real-time basis. If containers are returned to Unit 101 from Unit 102, or if they are moved to a different location within Unit 101, the operating record will be similarly updated.

Waste Sampling and Analysis are discussed in detail in Attachment 2 of this permit.

Containers will be opened by a variety of methods. Liquid storage containers with screw-in bungs in their lids may be sampled by removing the bung, withdrawing a sample and replacing the bung. Containers with fully removable tops (i.e. with retaining rings) may be opened by removing the ring, sampling and replacing the lid and ring.

During storage, the containers are kept closed to prevent dispersion of wastes into the environment. Containers are only opened for the following reasons:

- inspection
- sampling
- removal of Free Liquids
- shredding of containers
- transfer of wastes between containers

Regularly scheduled inspections of the container storage areas, loading/unloading bay and processing area are conducted to detect open or deteriorating containers, improper storage in the bays, liquids in the bays, or sumps; or other unsafe conditions as required by R315-8-9.5. The frequencies of these inspections are defined in Attachment 4.

Specific procedures for Lab Packs are discussed in the Waste Analysis Plan in Attachment 2 of this permit. These procedures will be followed should it be necessary to re-pack Lab Packs at the Facility prior to incineration.

Pursuant to 40 CFR 268.50, containers of waste prohibited from landfill disposal will be marked with the date on which the wastes are accepted for treatment at the facility.

Containers which are transferred to other units within the facility will be transported by hand, industrial truck or by trucks. The specific method employed will be dependent on the quantities and sizes of containers to be moved and the distances between units.

The CMB storage area Unit 101 is designed for the storage, sampling, inspection and staging of containers of RCRA and TSCA wastes. Twenty (20) storage bays, each of which consists of two (2) separate containment systems have been provided. Each bay is six (6) feet wide, and can store up to eighty (80) drums in a single stacked configuration, or 152 drums in a double stacked configuration. The total storage capacity in the seven storage bays is 181,040 gallons (based on secondary containment capacity). Due to the physical constraints, a total of 3040 55-gallon drums could be stored in the seven storage bays. Additionally, solid (non-free liquid bearing) hazardous waste in 55-gallon drums or overpack containers can be stored in each of the working areas in the following quantities:

Bay No.	North End	South End
A	none	12
B	12	20
C	none	none

D	none	8
E	12	12
F	none	12
G	none	12

The maximum quantity of non-free liquid bearing wastes stored in all of the working areas combined shall not exceed 5500 gallons. Storage in not permitted in the north end of Bays A, C, D, F, and G nor in the south end of Bay C. Outside of the seven storage bays and the working areas designated above, no storage of containerized waste is permitted. Figure D-1.1 overleaf shows the typical storage arrangement of drums within the CMB.

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Figure D-1.1 Typical Storage Arrangement

On either side of the storage bays are four (4) foot wide walkways raised a minimum of four (4) inches which provide access for safety equipment, maneuvering room for personnel and equipment, and facilitate inspection procedures. (See Section E-E of Dwg. 43-10-4-J01, sheet 1 of 2.) The bays have been designed to accommodate RCRA or TSCA wastes.

As discussed earlier, containers other than fifty-five (55) gallon drums may be stored within the bays. The precise arrangement of such containers cannot be predicted. Information collected from the manifest, pre-acceptance information, visual inspection, and/or on-site laboratory analyses will determine which of the six (6) following actions are appropriate for management of a given container:

- container and contents require transfer to truck or rail, to allow shipment off site.
- container holds inorganic liquids to be decanted at the aqueous waste tanks
- container holds organic liquids and solids or sludges to be decanted at the decant unit prior to shredding
- container holds only solids and can bypass the decant station and be directed to the shredder without further handling
- container is combustible and may be delivered directly to the kiln feed system

- container is an IMC or Sludge Box which may go directly to Solids Storage

Typical situations which would require the shipment of containerized wastes offsite include:

- the delivery of wastes manifested to Grassy Mountain which are in the process of being transferred
- shipment offsite arising from the rejection of wastes which the facility is incapable of treating
- shipment of treatment residues to other facilities

In all instances, if a container of waste is off-loaded at the facility, a record will be made and entered into the operating record and shown on the waste inventory. Loads remaining on the transport vehicle or in the bulk container awaiting acceptance at Safety-Kleen Clive will also be recorded in the operating record, with the status of awaiting acceptance noted.

Containers of wastes will be withdrawn from the storage bays for further processing. Containers requiring shipment off site or decanting at aqueous waste tanks will be staged in specifically labeled containment bays and transferred through one of the truck loading/unloading bays. Containers holding organic liquids will be transported by industrial truck to the decant station in Unit

102 for decanting. Containers without free liquids that require shredding and repackaging will pass through the Decant Station without additional inspection for direct feeding into the shredder at the shredding and repackaging unit. All noncombustible containers of waste to be incinerated will first be shredded.

At the decant station containers will be inspected, as described in the WAP, and decanted, without being removed from the conveyor, with the use of manually operated decanting wands and air-driven diaphragm pumps. Decanted liquids will be pumped through an overhead pipe rack to one of the four (4) decant storage tanks. If, after decanting, a container is determined to be RCRA empty, it may be directed off the conveyors and staged in the organic decanting area for shipment from the decant area truck bay. If a RCRA empty container is not going to go to the shredder, it will be transferred to a specifically identified area used for no other purpose. If a container holds sludges that cannot be decanted, it will be directed onto a conveyor leg that feeds the shredding and repackaging system.

The decanting equipment is capable of processing approximately one (1) drum every three minutes or 480 drums per twenty four (24) hour operating day.

Empty containers will be used as receptacles for shredded wastes being discharged from the Container Shredding/ Repackaging System. To eliminate the need for extensive wash facilities to decontaminate such containers prior to reuse, the containers will be lined with a disposable liner. Wastes from the Container Shredding/Repackaging System will be metered into these lined containers. The wastes and liner will be discharged into the screw feeder mechanism of the incinerator, while the container hoisting mechanism would retain the empty container for reuse. Containers used in this service will be routinely checked; and disposed of by shredding and incineration, once determined to be unsuitable for further use. Containers meeting the RCRA definition of empty may be sent offsite for disposal or recycling.

Details of equipment design and specifications may be found in Appendices 1-4.

Maximum storage capacity for the Container Management Building may be reached when either:

- the Shredding System is non-operational
- the Incineration System is non-operational
- the Decant System is non-operational

It is the intention of the facility, to endeavor to schedule shipments of waste into the Facility so as to avoid or minimize those instances when the maximum storage capacity of these units is approached.

Drums may be stacked two (2) high (double stacked) within the Container Management Building, providing that the wastes are compatible and that such stacking is consistent with the NFPA code for flammables storage. In addition, drums will be stored with labels required by this permit visible from the four foot wide walkway.

Containers other than drums, particularly those of small volume such as pint, quart and gallon sizes, may be stacked more than two (2) high, and will frequently be received that way. (Any stacking of containers not specifically regulated by the NFPA Code will be performed with safety of personnel uppermost in mind). Such stacking of containers of less than fifty-five (55)

gallon capacity will be restricted to a vertical height not to exceed six (6) feet to facilitate inspection. Minimum inspection aisles of two (2) feet in width will be maintained between adjacent double rows of containers in all storage areas. This does not preclude, as accepted management practices, the placing of large numbers of small containers within fifty-five (55) gallon or larger overpacks, and the double stacking of these containers, nor the storage of individual containers which may exceed a height of six (6) feet. The total volume of containers of wastes with free liquids will not be allowed to exceed permitted levels.

The maximum number of drums of waste, subject to regulation under RCRA, which may be placed in the CMB is 3040. This maximum number is a restraint imposed by the physical arrangement of drums within bays and stacking restraints rather than by secondary containment considerations.

Containers of wastes with free liquids may be stored to a maximum volume of 181,040 gallons in Unit 101, container storage, and to a maximum volume of 7,140 gallons in Unit 102, container processing. These numbers are based on secondary containment capacities. Drawing 43-10-4-J01, Sheets 1 of 2 and 2 of 2, show a typical storage arrangement for containers within the CMB.

Containers which are clearly manifested as not containing free liquids, and which are confirmed by visual inspection or testing to be free of liquids may be stored in the CMB, in the working areas as described on page 26 above.

Thaw Unit 105

The Thaw Unit may be used to store a variety of types of containers such as Drums, Boxes, Rail Tank Cars, Road Tanker Trucks, IMCs, Sludge Boxes, etc.

The maximum RCRA permitted capacity of the Thaw Unit is 381,880 gallons, or 51,050 cubic feet. The maximum TSCA permitted capacity is 152,752 gallons, or 20,420 cubic feet.

Containers will remain closed except when transferring waste, inspecting or sampling. Drawing 43-10-4-J10 Thaw Unit Plan & Sections identifies aisles along the sides of the building which are four (4) feet four (4) inches wide, and a center aisle over the containment sumps which is six (6) feet wide.

It is estimated that tank cars or containers would typically remain in the building between one (1) and three (3) days. Under severe freezing conditions, which might occur during transit from remote northern areas, frozen wastes may require a longer period to thaw. In any case, containers may remain in the Thaw Unit as it is a permitted storage area.

Containerized Bulk Solids Storage Unit

Industrial equipment, such as trucks equipped for roll-off bins, bridge cranes, straddle-packers or forklifts will be used to load, unload, and move containers at Unit 106. Trucks equipped to load and unload roll-off bins will use winches to lower and raise the container. Straddle-packers (similar to a mobile

gantry crane) will lift, from above, large containers of waste up into their hold. The straddle-packer may be used to remove containers directly from the trucks parked in the truck access aisle or the straddle-packer may be used to pick up a container that has been "staged" in the truck access aisle. Similarly, the straddle-packer may be used to place containers directly onto trucks or may place the container in the truck access aisle for "staging" until the container is placed back into storage (e.g., in another location, etc.) or loaded onto a truck for transport to another unit or off-site. Within the enclosed portion (southern end of Subunit 1 used to store TSCA[1] waste) the straddle-packer will not be able to operate (roof height not adequate to allow straddle-packer access). Therefore, an overhead bridge crane will be used within this area to move, load, or unload containers. The particular equipment and method selected to transport a container will depend on the size and

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[1] Unit 106 will be used primarily to store RCRA waste. The TSCA waste storage area (enclosed portion of Subunit 1) is subject to approval by the Air, Radiation, and Toxics (ART) Division of the EPA. The RCRA waste storage areas (all areas of all subunits including the enclosed portion of Subunit 1) are subject to approval by the Utah DSHW. If the Unit 106 modification request is approved by the Utah DSHW and EPA ART, Safety-Kleen Clive will be able to store RCRA waste in all areas in all subunits. TSCA waste storage would be limited to the enclosed portion of Subunit 1 (southern portion of Subunit 1).

construction of the container, and its current and intended (future) location. If the straddle-packer or overhead bridge crane is inoperable, the facility may use a crane positioned outside of the subunit or a piggy-packer or truck inside the subunit to move, load, or unload containers.

In each subunit, there will be three rows containing a variable number of containers. A typical storage arrangement within the Containerized Bulk Solids Storage Unit is shown on Drawing 43-10-2-D61, sheet 4. A minimum of 2.5 feet of aisle space will be maintained between containers in Unit 106, in accordance with permit requirement II.J.4.

If a waste shipment contains incompatible waste, the waste will be placed in a segregated storage area. If it is determined that a container of waste is incompatible with the other wastes stored within the containment system (i.e., the enclosed portion of Subunit 1, the unenclosed portion of Subunit 1, Subunit 2, or Subunit 3), it will be removed and placed in a different area with other wastes with which it is compatible. This separation method for wastes requiring segregation is in compliance with 40 CFR 264.177(c).

During storage, the containers will be kept closed to prevent dispersion of wastes into the environment. Containers will be opened only for inspections, sampling, and transfer of wastes between containers (e.g., in response to a leaking container). Regularly scheduled inspections of the container storage areas will be conducted to detect open or deteriorating containers, improper storage, liquids in the secondary containment system; or other unsafe conditions as required by R-315-8.9.5. The frequencies of these inspections are defined in Appendix B to Attachment 4.

All wastes stored in the Containerized Bulk Solids Storage Unit will eventually be transferred to other on-site management units for storage and treatment, following normal routing procedures, or to appropriate off-site facilities. On-site management units which will accept wastes directly from Unit 106 will include the Bulk Solids Storage Unit (Unit 251), the Energetic Solids Storage Unit (Unit 252), the Container Management Building (Unit 101), the Container Processing Building (Unit 102), the Tank Farm (Units 531-534; 601,602), the Special Handling Bay (Unit 538), and the Thaw Unit (Unit 105).

The location of containers stored at Unit 106 will be recorded in the operating record by using an alpha-numeric system of coordinates that will identify the storage location and level (layer) of each container. The operating record will be maintained so that it will accurately indicate the waste identification number, the quantity of the waste, and the location of the waste at Unit 106 in accordance with R315-8-5.3 of the Utah Administrative Code (which incorporates 40 CFR 264.73(b)(1) and (2)).

A grid system has been defined for Unit 106 and is presented in Drawing 43-10-2-D61, sheet 4. The grid is numbered from 1 to 19 and from A to J. Lines painted on the concrete surface indicate the aisle spaces between containers. The painted lines indicating the aisles create a minimum 2½ feet aisle space. This will facilitate the positioning of the containers and allow easy inspection to ensure that the minimum aisle spacing of 2½ feet has been met, i.e. as long as the containers do not encroach on the painted lines, the necessary aisle space is being maintained.

To identify the stacking arrangement of containers within the area, a letter will be used to indicate if the container is at ground level or stacked on top of another container. The letter

S will designate those containers found at ground level, the letter D will designate those containers that are stacked on top of one other container (double stacked), and the letter T will designate those containers stacked on top of two other containers (triple stacked). An example of a typical location identifier used to identify the location of a container in the area would be 106-C05D; the 106 indicating that the container is stored at Unit 106, the letter C indicating that the container is in row C of the grid, the number 05 indicating that the container is in column 5 of the grid, and the letter D indicating that the container is stacked on top of one other bulk container.

Records will be maintained at the facility which will allow access to information regarding wastes, and document the movement of wastes through the facility from receipt, to storage, to treatment and/or to shipment off-site. The records will be accessed by a unique identifier assigned to each waste container.

Rail/Truck Tanker Transfer Unit (located in Unit 535)

A maximum of one (1) rail tanker will be located at the Rail/Truck Tanker Transfer Unit at any given time. Based on containment volume considerations, the maximum RCRA permitted capacity of the Rail/Truck Tanker Transfer Unit is 23,560

gallons, or 3,150 cubic feet. Containers will remain closed except when inspecting, sampling, adding or removing wastes.

Special Handling Bay, Unit 538

A maximum of one (1) Tanker Truck will be stored in the Special Handling Bay at any given time. More than one intermodal type container and/or gas cylinder may be stored in the unit as long as the combined capacity of the containers is less than 6,500 gallons and the wastes are compatible. Gas cylinders may be processed at the same time as a liquid tanker or intermodal type container. When one or more gas cylinders are present in Unit 538, only one other container (i.e., tanker truck or intermodal container) will be allowed in the unit at the same time. Based on containment volume considerations, the maximum RCRA permitted capacity of the Special Handling Bay is 17,652 gallons, or 2,359 cubic feet. Containers will remain closed except when inspecting, sampling, adding or removing wastes.

1.1.3 Secondary Containment System Design and Operation: R315-8-9.6(a), (b)(d); 40CFR 270.15(a)(1), 264.175(a),(b),(d)

Container Management Building, Units 101, 102.

The secondary containment system of the Container Management Building has been designed to facilitate sound container management practices and prevent the release of hazardous wastes into the environment. Drawings 43-10-4-J01 and 43-10-4-J02 provide plan, elevation and section views of the building and the containment system design.

The narrative in 1.1.2 has identified how potentially in compatible wastes are managed and segregated within the containment system.

All F020, F021, F022, F023, F026, and F027 waste will be stored in areas which meet the secondary containment requirements as found in R315-8-9.6.(d)(1) and 40 CFR 175(b).

Thaw Unit 105

The secondary containment system of the Thaw Unit has been designed to facilitate sound container management practices and prevent the release of hazard wastes into the environment. Drawings 43-10-4-J10 and 43-10-2-J05 provide plan, elevation and section views of the building and the containment system design.

Containerized Bulk Solids Storage Unit (Unit 106)

The secondary containment system of the Containerized Bulk Solids Storage Unit has been designed to facilitate sound container management practices and prevent the release of hazardous wastes into the environment. Plan, elevation and section views of Unit 106 and the containment system design are shown on Drawing 43-10-2-D61, sheets 4 through 12.

Rail/Truck Tanker Transfer Unit (located in Unit 535)

The secondary containment system of the Rail/Truck Tanker Transfer Unit has been designed to facilitate sound container management practices and prevent the release of hazard wastes into the environment. Drawings 43-53-4-J07 and 43-53-2-J01 provide plan and section views of the bay and the containment system design.

Special Handling Bay, Unit 538

The secondary containment system of the Special Handling Bay has been designed to facilitate sound container management practices and prevent the release of hazard wastes into the environment. Drawings 43-53-4-J09 and 43-53-2-J03 provide plan and section views of the bay and the containment system design.

The facility does not intend to use custom designed vessels for special handling. Conventional road tankers and intermodal containers are expected to deliver these wastes, and the secondary containment was designed with these types of vehicles in mind.

1.1.3.1 Requirement for the Base or Liner to Contain Liquids: R315-8-9.6(b)(1); 40 CFR 264.175(b)(1)

Containment areas are constructed on a minimum of eight (8) or nine (9) inch thick concrete pads reinforced with one (1) or two (2) mats of #4 steel reinforcing bar poured on a compacted fill base. The slabs will be free of cracks or gaps. All joints contain a continuous water stop to prevent migration of water past the stop. In the CMB, containment will be provided by a eight (8) inch high curb around the building perimeter. Similar curbs will segregate the storage areas from each other.

A sealant will be maintained on all concrete surfaces within the containment systems. If liquids are discovered, they will be removed within twenty-four (24) hours of detection.

A table listing the technical specifications of each coating group used in the container storage units within the facility is provided in Appendix 3, Concrete Coatings.

1.1.3.2 Containment System Drainage: R315-8-9.6(b)(2); 40 CFR 270.15(a)(2), 264.175(b)(2)

Container Management Building, Units 101, 102. Storage Areas Unit 101.

The floor of each storage bay is sloped at a nominal grade of one quarter (1/4) inch per foot to two (2) separate collection sumps. Storage rooms A through F are provided with six (6) sumps, storage room G has four (4) sumps.

The working areas at either end of the storage rooms, provided for equipment maneuverability, are also sloped at a minimum of 3/16 inch per foot to spill containment sumps two (2) feet by two (2) feet by two (2) feet located in the center of the areas. The sloped floor and sump provide approximately 539 gallons of containment volume. These corridors are not intended for storage of containers with free liquids or waste codes F020, F021, F022, F023, F026, F027, however a limited number of containers without free liquids may be stored in these areas. A typical storage arrangement is shown in 43-10-4-J01, sheet 1 of 2.

Processing Area Unit 102.

The container processing area floor area is sloped at a minimum 1/8 inch per foot to two (2) sumps that are each approximately 1'-6" wide by 62'-6" long by 16" deep (avg.). This area is not intended for routine container storage, however, it has a permitted capacity of 7,140 gallons which may be used as needed. The storage areas are completely enclosed to prevent run-on of rain or dispersion of wastes by wind.

Thaw Unit 105

The floor of the Thaw Unit is sloped at approximately 1/8 inch per foot to four (4) separate sumps. The storage areas are completely enclosed to prevent run-on of rain or dispersion of wastes by wind. Wastes will only be placed in the Thaw Unit after review of manifest information to confirm that the wastes are compatible. If subsequent sampling, testing and/or analysis indicate that incompatible wastes are present in the Thaw Unit, such containers of wastes determined to be incompatible will be removed.

Containerized Bulk Solids Storage Unit (Unit 106)

The floor of each storage area within the Containerized Bulk Solids Storage Unit will be sloped (1% to greater than 1.5% - see

Drawing 43-10-2-D61 sheets 5 and 12 for details) toward the outside perimeter berms. Most containers will be equipped with legs which support the body of the containers a minimum of eight (8) inches above ground level. If a container is not equipped with legs (8 inch minimum), another method will be used to elevate the container. Other methods may include placing railroad ties or grating beneath the container. The elevation of each container, in combination with the drainage provided by the slope of the concrete floor, will satisfy the requirements of 40 CFR 264.175(b)(2) by preventing contact between the accumulated liquid and the body of each container.

Special Handling Bay, Unit 538

The Special Handling Bay is sloped at approximately 3/4 inch per foot to a sump twenty three (23) feet long by three (3) feet wide by three (3) feet eleven (11) inches to four (4) feet four (4) inches deep.

Rail/Truck Tanker Transfer Unit (located in Unit 535)

The rail side of the Rail/Truck Tanker Transfer Unit is sloped at a nominal 1/4 inch per foot to two (2) sumps each of which is 14 feet long by 3 feet wide by 3"-6" feet deep (minimum). The tanker truck side of the Rail/Truck Tanker Transfer Unit is

sloped at a nominal 1/2 inch per foot to one (1) sump in the center of the bay which is 14 feet long by 3 feet wide by 3 feet 6 inches deep (minimum).

Special requirements for ignitable or reactive wastes: R315-8-9.7; 40 CFR 264.176.

Ignitable wastes will be stored in segregated bays within the Container Management Building, or at the Thaw Unit, Special Handling Bay, Containerized Bulk Solids Storage Unit (Unit 106), and Rail/Truck Tanker Transfer Unit. These units are located well in excess of fifty (50) feet from the Facility property boundary. (Refer to Dwg. 43-01-110.) Two (2) hour rated fire walls separate each group of three (3) bays from the other storage areas of the Container Management Building. Measures to prevent accidental ignition of ignitable wastes include the prohibition of smoking, use of non-sparking tools and enforcement of procedures to control burning and welding. Attachment 6 of this permit addresses these procedures in detail.

Special requirements for incompatible wastes: R315-8-9.8; 40 CFR 264.177.

Container Management Building, Units 101, 102.

Containers are unloaded onto receiving docks at the Container Management Unit and after inspection and sampling as necessary at

the sampling stations, are placed in segregated storage bays. Waste samples will then be analyzed. Should one or more containers subsequently be determined to be incompatible with the other wastes stored in a containment bay the container(s) of incompatible waste will be relocated to a bay of compatible wastes. Each containment bay is provided with a sump and a concrete floor with an integral concrete curb eight (8) inches high around the perimeter of the floor slab. The sump of this secondary containment system is of sufficient volume to contain a minimum of ten (10) percent of the volume of the maximum number of containers with free liquids permitted for storage in that bay. The design of the CMB provides forty (40) segregated containment bays in which to manage incompatible wastes. The criteria for deciding where particular wastes are stored is based upon considerations of chemical compatibility and storage bay capacity. These containment bays will be used interchangeably. A bay will be cleaned if a spill has been reported or evidence of a spill is found when removing containers from the bay. Normal decontamination procedures will be employed in cleaning up spills. Equipment normally employed during cleanups includes brooms, shovels, absorbents, pumps, detergents and wash water.

A board or plan of the building will be utilized to document which types of wastes are stored in particular areas. This plan will be updated as necessary and referenced when determining where to store incoming wastes to assure potentially incompatible wastes are not stored together in a single containment system.

Facility personnel will inspect all containers and their covers for evidence of leakage, deterioration, or severe corrosion during off-loading at the Container Management Building. Inspection schedules are discussed in Attachment 4 of this permit. Wastes and/or containers exhibiting evidence of leakage, deterioration, or severe corrosion will be transferred into overpacks, or containers in good condition. Inspections for open containers, improper storage in bays, and liquids in the sumps will be made. The concrete containment system will be inspected for evidence of cracking or gaps in concrete joints, breaching of the berm walls or damage to the coating system.

Thaw Unit 105

When received at Unit 105, incoming containers will be placed in storage so that incompatible wastes, as described by the manifests, will not be placed within the same containment system.

Should one or more containers subsequently be determined to be incompatible with the other wastes stored in a common secondary containment system, the container(s) of incompatible waste will be relocated to another secondary containment system containing compatible wastes. The criteria for deciding where particular wastes are stored will be based upon considerations of chemical compatibility and storage area capacity. Storage areas will be used interchangeably.

Four separate sump systems are provided to contain leaks from containers.

A storage area will be cleaned if a spill has been reported or evidence of a spill is found when removing containers from the storage area. Normal decontamination procedures will be employed in cleaning up spills. Equipment normally employed during cleanups includes brooms, shovels, absorbents, pumps, detergents and wash water.

Containerized Bulk Solids Storage Unit (Unit 106)

When received at Unit 106, incoming containers will be placed in storage so that incompatible wastes, as described by the

manifests, will not be placed within the same containment system.

Should one or more containers subsequently be determined to be incompatible with the other wastes stored in a common secondary containment system, the container(s) of incompatible waste will be relocated to another secondary containment system containing compatible wastes. The criteria for deciding where particular wastes are stored will be based upon considerations of chemical compatibility and storage area capacity. Storage areas will be used interchangeably.

A storage area will be cleaned if a spill has been reported or evidence of a spill is found when removing containers from the storage area. Normal decontamination procedures will be employed in cleaning up spills. Equipment normally employed during cleanups includes brooms, shovels, absorbents, pumps, detergents and wash water.

Special Handling Bay, Unit 538

This bay is specifically provided to permit the safe and effective management of certain wastes which may need to be segregated from other waste streams or require other special

handling techniques. Only containers with compatible wastes will be located in the Special Handling Bay at any one time.

Rail/Truck Tanker Transfer Unit (located in Unit 535)

This bay is specifically provided to permit the safe and effective management of certain wastes which may need to be segregated from other waste streams or require other special handling techniques. Wastes will be unloaded from the rail tanker into a road tanker. Only one (1) container will be located in the Rail/Truck Tanker Transfer Unit at any one time.

1.1.3.3 Containment System Capacity: R315-8-9.6(b)(3); 40 CFR 270.15(a)(3), 264.175(b)(3).

Container Management Building, Units 101, 102.

Each segregated containment bay is equipped with two (2) spill containment sumps that are six (6) feet long by three (3) feet wide by three (3) feet eight (8) inches deep and have a minimum capacity of 453 gallons each. Each bay is six (6) feet wide, has a total length of ninety (90) feet and a usable storage length of eight-four (84) feet (discounting for two (2) three (3) feet wide sumps). Each bay is divided into two (2) forty-five (45) feet long areas that are each sloped at nominal 1/4 inch per foot from both ends to the containment sump located at the center. Each

area is segregated from adjacent storage areas by raised walkways that are four (4) feet wide and a minimum of four (4) inches high.

Storage rooms A through F are each provided with six (6) sumps. Storage room G is provided with four (4) sumps. The total containment volume of the CMB storage rooms is 18,104 gallons. Therefore permittable storage volume for RCRA wastes containing free liquids is 181,040 gallons or 24,200 cubic feet.

The majority of containers stored at the CMB are expected to be fifty-five (55) gallon drums. The maximum number of such drums that will be stored in Unit 101 of the CMB at any one time is 3040. Assuming a worst case scenario where all 3040 drums contained fifty-five (55) gallons of free liquids, the required containment volume, under RCRA, is 3040 * 55 * 0.1 = 16,720 gallons. The maximum sized container of free liquids which can be stored in the CMB is limited by the containment volume of a single containment system (half of one bay) containing one (1) sump. The sump minimum containment volume is 453 gallons and thus the maximum sized RCRA container is limited to 453 gallons as required by 40 CFR 264.175(b)(3).

Under TSCA regulations, a storage area must be provided with a six (6) inch curb, (this is satisfied by the building perimeter curb) and must provide a containment volume equal to twenty-five (25) percent of the volume of the containers stored, or 200% of the largest container. Because compatibility is not an issue, any spilled liquid can surround other TSCA containers within the containment system. Thus liquids may overflow the sump and occupy the sloped area of the containment bay. Additional secondary containment capacity of approximately 400 gallons is provided by the sloped floor in each segregated bay.

Thaw Unit 105

The volume of the Thaw Unit containment is summarized in 1.1.2.

Containerized Bulk Solids Storage Unit (Unit 106)

The permitted storage capacity for each subunit and the entire unit is as follows:

Subunit	Permitted Capacity (gallons)	Permitted Capacity (ft^3)
Subunit 1 (unenclosed)	200,064	26,745
Subunit 1 (enclosed)*	570,520	76,268
Subunit 2	617,463	82,543
Subunit 3	600,168	80,231
TOTAL FOR UNIT 106*	1,988,215	265,787

* Note: The TSCA[1] permitted storage capacity for the enclosed portion of Subunit 1 is 534,613 gallons (71,467 ft^3).

[1] Unit 106 will be used primarily to store RCRA waste. The TSCA waste storage area (enclosed portion of Subunit 1) is subject to approval by the Air, Radiation, and Toxics (ART) Division of the EPA. The RCRA waste storage areas (all areas of all subunits including the enclosed portion of Subunit 1) are subject to approval by the Utah DSHW. If the Unit 106 modification request is approved by the Utah DSHW and EPA ART, Safety-Kleen Clive will be able to store RCRA waste in all areas in all subunits. TSCA waste storage would be limited to the enclosed portion of Subunit 1 (southern portion of Subunit 1).

Special Handling Bay, Unit 538

The volume of the Special Handling Bay containment is summarized in 1.1.2.

Rail/Truck Tanker Transfer Unit (located in Unit 535)

The volume of the Rail/Truck Tanker Transfer Unit containment is summarized in 1.1.2.

1.1.3.4 Control of Run-On: R315-8-9.6(b)(4); 40 CFR 270.15(a)(4), 264.175(b)(4),

The storage areas will be completely enclosed within the Container Management Unit and Thaw Unit, to prevent ingress of wind borne rain or dispersion of wastes by wind. The Container Management Unit is constructed on a concrete pad with an eight (8) inch high perimeter curb, the Thaw Unit also has an eight (8) inch perimeter curb. Rainwater from the roofs will be brought to grade level by a system of roof drains. Site grading around the buildings will divert water away from them.

The Special Handling and Rail/Truck Tanker Transfer Units are surrounded by concrete berms which prevent run-on into the containment areas.

Likewise, in Unit 106, each subunit will be completely surrounded by perimeter curbs that will prevent surface water run-on into the containment areas (see Drawing 43-10-2-D61 (sheets 5 through 12 for curb details). The unenclosed containment areas have been designed to accommodate the amount of rainfall that would accumulate from a 25-year, 24-hour storm event (1.9 inches) and 10% of the volume of containers stored as required by 40 CFR 264.175(b)(3). Therefore, run-on is prevented and/or controlled as required by 40 CFR 264.175(b)(4).

1.1.3.5 Removal of Liquids from Containment Systems: R315-8-9.6(b)(5); 40 CFR 270.15(a)(5), 264.175(b)(5)

The floor of the Containerized Bulk Solids Storage Unit will be sloped (1% to greater than 1.5%) in all container storage areas and access aisles. This slope will facilitate the detection of leaks, causing any liquid which might leak from a container to migrate down the slope to the perimeter areas. Liquid which accumulates in the secondary containment system will be collected (e.g., vacuum truck, portable pump, etc.) and managed as a hazardous waste.

The floor slope of 1/8 to 1/2 inch per foot provided in all other container storage bays, access corridors and processing areas

(except the Special Handling Bay where the slope is approximately 3/4 inch per foot) will facilitate the detection of leaks, causing any liquid which might leak from a container to migrate down the slope to a containment sump.

When an inspection reveals liquid within a sump, the source of the leak will be identified. The identification of the location of a leak may be accomplished in a number of ways, using a variety of inspection techniques. Visual inspection of the condition of containers, localized staining or leakage adjacent to a particular drum, rocking of containers to determine if volume has been lost are techniques which are most likely to be employed to trace the source of a leak. If these measures fail, a sample of the liquid in the sump will be analyzed for a range of characteristics based upon the possible contents of the containers in the containment area. This process should identify the waste stream to be identified. All the containers of that waste stream would then be checked for leaks.

Wastes from the leaking container will be transferred into a clean container, or the container and its contents will be transferred into an overpack. Liquid in the sump will be transferred from the sump to a clean container, or to one of the

decant tanks, via a portable pump. Other suitable methods using absorbents, vacuum systems, etc. may also be used to manage spills. Any container into which wastes are transferred will be appropriately labeled as to the type of waste stored in it and with the same treatment methods as specified for the container from which the waste originated. In the unlikely event that the waste cannot be traced back to a specific container or group of containers, a sample will be analyzed to permit proper definition of the treatment protocol necessary for the waste. Minor leakage which does not flow to a sump will be absorbed, collected and placed in an appropriately labelled container.

1.2 Containers without Free Liquid: R315-8-9.6(c); 40 CFR 264.175(c), 270.15(b).

1.2.1 Test for Free Liquids: 40 CFR 270.15(b)(1)

During incoming load acceptance procedures, all containers are visually inspected and a minimum of 10% of the containers sampled.

If such inspection procedures indicate that the wastes may contain free liquids, then all such containers will be sampled and the Paint Filter Test, Method 9095 would be employed to determine the status of the waste.

All containers of shredded and repackaged waste are visually inspected as the containers are removed from the shredding/repackaging system. In the unlikely event that a repackaged container still appears to contain free liquids, it will be recycled through the decant station and shredder.

Containers without free liquids (except for those containing F020, F021, F022, F023, F026 and F027 wastes) may be stored outside of a containment system pursuant to R315-8-9.6(c) and 40 CFR 264.175(c), or may be stored within the CMB or other permitted storage areas, in accordance with the limitation

established by this permit. In addition, containers without free liquids may be stored in areas that are permitted to store free liquids. Such additional storage would be arranged so as to maintain adequate access to the containers as required by 40 CFR 264.35. Any container stored in a permitted liquid hazardous waste storage unit will be considered to be full of liquid hazardous waste for the purpose of determining compliance.

1.2.2 Description of Containers:

Container Management Building, Units 101, 102.

Containers without free liquids stored at the CMB are stored in areas sloped to drain liquids away from containers, and are covered to prevent ingress of precipitation pursuant to R315-8-9.6(c)(1). Types of containers are described in 1.1.1.

Ash Accumulation

Safety-Kleen Clive is a generator of hazardous waste, subject to regulation under 40 CFR 262 for incinerator residues. These residues are accumulated in containers such as semi-trailer trucks, or roll-on/roll-off boxes. These wastes are accumulated for less than ninety (90) days, in unpermitted areas, and utilize containers which comply with 40 CFR 265 Subpart I. As long as the waste in these containers is stored for less than 90 days,

they are not subject to the storage provisions of the permit, but are subject to 40 CFR 262.34. The reviewer is directed to Dwg. 43-25-9-J01.

Appendix 1

Conveying Systems

insert conveyor specifications table

ATT9APP1.XLS

Appendix 2

Pumps

insert pump summary table

ATT9APP2.XLS

Appendix 3

Concrete Coatings

The concrete coating systems for the facility will consist of four (4) types. Each type is selected to provide the appropriate level of protection against chemical penetration and abrasion for all concrete secondary containment surfaces within the facility. The types are differentiated by the configuration of the surface to which they will be applied. These four types are designated I, II, III and IV, and a general, functional specification for each system is provided below.

Type I: Coatings for horizontal surfaces outside of sumps and trenches. These coatings are designed for high volumes of abrasive traffic as well as for excellent chemical resistance.

Type II: Coatings for sumps and trenches. These coatings provide a very high degree of chemical resistance. These coatings may also be used for coating joints in the concrete outside of sumps and trenches.

Type III: Coatings for vertical surfaces outside of sumps and trenches. These coatings are similar to Type I coatings, except that they have a somewhat lesser degree of abrasion resistance.

Type IV: Coatings for expansion joints, construction joints, corner fillets, and repairing cracks. These coatings are more elastic than most of the other coatings to provide a seal while accommodating slight movements of the concrete. Type IV coating is only used where slab movement is experienced or anticipated.

The following coating system specification establishes the minimum standards for each system. A coating system that meets or exceeds these standards may be substituted.

Type I: Horizontal Surfaces

- Tnemec Series 66 Hi-Build Epoxoline (12 mils min.) topped by Tnemec Series 71 Endura-Shield (2.5 mils min.) .;or,
- Sentry Semstone 140 (30 mils min.) topped by Semstone 245 (10 mils min.); or,
- Rust-Oleum CPS Lite Overkote (30 mils min.) topped by Overkote Plus (10 mils min.); or
- 1/4 inch of Koch TECHNI-PLUS EP 60 SL.

Type II: Sumps & Trenches

- Tnemec Series 66 Hi-Build Epoxoline (12 mils min.) .; or,

- Sentry Semstone 245 (50 mils min.) topped by Semstone 245 (60 mils min.); or,
- Rust-Oleum Overflex (60 mils min.) topped by Overkote Plus (125 mils min.).

Type III: Vertical Surfaces

- Tnemec Series 66 Hi-Build Epoxoline (12 mils min.) .; or,
- Sentry Semstone 140 (30 mils min.) topped by Semstone 245 (10 mils min.); or,
- Rust-Oleum CPS Lite Overkote (30 mils min.) topped by Overkote Plus (10 mils min.); or
- 1/8 inch Koch TECHNI-PLUS EP 60 SL.

Type IV: Expansion & Construction Joints, Crack Repair

- Tnemec Series 66 Hi-Build Epoxiline (12 mils min.) topped by Tnemec Series 71 Endura-Shield (2.5 mils min.); or,
- Sentry Semstone 805 (50 mils min.)with Semstone 805 coating fabric strip immersed in Semstone 805 (10 mils min.) topped with SPX 5100 (10 mils min.); or,
- Rust-Oleum Overflex (60 mils min.) with woven roving fiberglass strip topped by Overkote Plus (125 mils min.); or

P Sikaflex - 2c NS/SL (3/4 inch minimum).

Table D-1-B.1 lists the coating groups to be used in each unit.

Table D-1-B.1

Application of Concrete Coatings to Units

Unit No.	Concrete Coating/ Sealant System
101	Rust-Oleum
102	Sentry
103	Sentry
105	Rust-Oleum
106	Koch/Sikaflex
251	Sentry
252	Sentry
531	Sentry
532	Sentry
533	Sentry
534	Sentry
535	Sentry
538	Sentry
601	Sentry
602	Sentry
604	Rust-Oleum

Appendix 4

Container Shredding/Repackaging System

Table of Contents

List of Tables

Shredder Design and Operation

General

The container shredding/repackaging system in Unit 102 is designed to perform two major functions:

- Shredding of steel, fiber, wood or plastic containers and the solids residues, after decanting of free liquids, in preparation for incineration;

- Repackaging of the shredded solids into containers equipped with disposable liners for feeding to the burner kiln.

The shredding/repackaging system will be a totally enclosed, semiautomatically operated unit capable of processing approximately one (1) fifty-five (55) gallon drum per minute of operation. Under normal operating conditions, the maximum volume of material inside the shredder should be approximately twenty-five (25) to thirty (30) cubic feet (about three (3) fifty-five (55) gallon containers), and the maximum residence time for material held inside the shredder should be about five (5) to six (6) minutes, based on the processing of one container per minute through the system. During shredding, the overall volume occupied by the waste may increase through addition of absorbent and fluffing of waste tightly packed within containers.

The hydraulic container positioning rams will insure good contact between the containers and shredder blades for efficient shredding, and shredded wastes will be repackaged continuously to prevent the backup of material in the system. An additional ram is provided in the repackaging chamber to push material out of the chamber through the slide gates and into the lined receiving container. Both the

shredded solids repackaging leg and free liquids holding chamber will be equipped with high level sensors (LS-039 and LS-035) respectively to detect any backup of material within the system (see Dwg. 43-10-9-J03). If a high level is detected in either leg of the system, the feeding of containers will be automatically discontinued until the reason for these abnormal levels is ascertained and the levels can be returned to normal.

The container shredding system will be operated so as to maintain an ample backlog of repackaged containers for feed to the burner kiln. This quantity will vary from a one (1) to five (5) day supply, depending on the amount and type of other wastes to be incinerated. The majority of containers (approximately 144 to 720 containers or 12 hours of shredder operation) will be stored in Unit 101. The design capacity of the unit exceeds that necessary to sustain the Burner Kiln. On occasion, particularly during commissioning, startup and shakedown, repackaged containers may be shipped offsite for treatment at other appropriate facilities. During routine operations, a limited number of containers will be staged in Unit 102 to facilitate transfer to the Burner Kiln. Unscheduled maintenance or inspection is not anticipated to require downtime greater than this period of five (5) days. The Burner Kiln is further capable of processing combustible containers, which do not require shredding; introduced to the kiln through the ram feeder; and bulk energetic wastes introduced through the auger feeder.

Should these systems not be capable of satisfying the feed of demands of the Burner Kiln, wastes, after decanting if required,

may be transferred to either the bulk solids or energetic solids buildings and processed through those systems.

Anticipated downtime for routine inspection is estimated at thirty (30) minutes per shift, while scheduled maintenance downtime is expected to be less than 240 hours per year.

Physical Characteristics

The shredding/repackaging system will be constructed of carbon steel. The physical dimensions of the shredder itself are anticipated to be approximately thirty-five (35) inches high by fifty-eight (58) inches wide by 241 inches long, with the inside dimensions of the cutting chamber of forty-one (41) inches by 101 inches. The shredder weighs approximately 42,000 lbs. The physical layout of the overall shredding/repackaging system and its anticipated dimensions are shown in drawing 43-10-7-J01. The system and associated conveyors, etc., are shown on drawing 43-10-4-J02, sheet 2 of 2. The shredding/repackaging system will be located inside a building of which a portion has an elevated roof approximately sixty-four (64) feet high to accommodate the system and associated equipment.

The other major piece of equipment associated with the shredding system is the absorbent accumulation tank (TK-045) and its unloading conveyor. This tank will be used to accumulate/store absorbent materials (limestone, etc.) prior to their being fed to the shredder. Absorbents will be fed through the system to absorb free liquids which may remain in the wastes after decanting. Approximately eight (8) cubic feet of absorbent material will be processed through the system between batches of incompatible

wastes. The absorbent accumulation tank will be constructed of carbon steel, will be approximately ten (10) feet in diameter with a twelve (12) foot shell height and sixty (60) degree cone bottom, giving it a nominal capacity of 1,170 cubic feet. The absorbent accumulation tank is located inside Unit 102 as shown on Dwgs. 43-10-4-J01 (sht 2/2) and 43-10-4-J02 (sht 2/2).

Design

The shredding system is designed to shred various types of containers and wastes contained therein. The shredding system will consist of the following major components as shown on Dwg. 43-10-9-J03.

- Lift Feed Conveyor
- Drum Lift
- Inlet Airlock Doors
- Shredder Charge Hopper
- Shredder with Breaker Bar
- Plate
- Liquids Removal Rotary Valve and Drum
- Solids Removal Outlet Airlock Gates and Drums
- Absorbent Feed Conveyor and Storage Tank
- Inspection Camera
- Operating and Safety Control Systems

As shown in Dwg. 43-10-9-J03 (shts 1 and 2) and 43-10-7-J01 (shts 1 and 2), the shredder is totally enclosed and is equipped with a nitrogen blanketing/purge system, and explosion/fire suppression system, explosion relief vents, a video camera port for inspection, and two hydraulic rams for manipulation of drums and shredded waste. The shredder itself is a high torque, "low-speed" device

that shreds material by drawing it through two (2) counter-rotating shafts to which cutting blades are mounted. These shafts are driven by a system that automatically reverses (or backs up) when an unshreddable item is encountered, then reverses again to resume shredding. These low-speed machines, by nature, create very little or no dust because there are no high-speed impacting forces between the counter-rotating shafts. However, due to the nature of the materials to be shredded, several safety precautions are designed into the shredding system including the following:

- Wastes bearing the code D003 which demonstrate the characteristic of reactivity; and wastes listed under 40 CFR 261 Subpart D as reactive and which demonstrate the characteristic of reactivity; will not be processed through the container shredding/repackaging system. Any wastes accepted for management at the facility which demonstrate the characteristic of reactivity will only be accepted if packaged in combustible containers of suitable size for the ram feeder or if managed through the Special Handling Bay.

- A nitrogen blanketing/purge system will maintain the shredder at a slight positive pressure and can provide a purge of a large volume of nitrogen if the on-line oxygen analyzer indicates an excess concentration of oxygen in the shredder.

- The shredder will also be equipped with infrared detectors at key locations to detect incipient explosions and to activate a fire suppression system designed to "snuff out" any fire or explosion.

- The explosion relief vents have been designed and located specifically to release the force of an explosion and direct the impact of any explosion away from the shredding equipment and work areas.

- Additionally, all motors, instruments, and control panels associated with the shredding/repackaging system are approved for use in areas classified for hazardous atmospheres.

The shredder intake and solids discharge slide gates are designed to permit the introduction of containers and the discharge of shredded solids, respectively, while preventing the release of dust or vapors from the system. The two (2) sets of slide gates will be equipped with a control system to prevent both gates of a set opening simultaneously. The volume between each of these sets of slide gates will be purged by at least an equal volume of nitrogen between each cycle. These gates, in addition to the rotary air lock valves for absorbent feed and liquids discharge, will allow continuous operation of the shredder while minimizing the introduction of ambient air and the escape of fugitive emissions.

The shredding/repackaging system also includes several other major operating items. The powered lift feed conveyor and drum lift will allow introduction of containers into the inlet airlock doors. Internal hydraulic rams will aid in positioning of the container in the shredder charge hopper. The shredder will be equipped with a breaker bar (anti-pass through device) to eliminate the passage of long, thin articles through the shredder teeth without being shredded. Some liquids may pass around the plate and through a rotary feeder into an accumulation drum. All other material from

the shredder will drop onto the slanted plate. This material will fall from the slanted shredder plate into a cylindrical chamber which houses the set of discharge slide gates. A second hydraulic ram will be installed to aid in the discharge of shredded solids through the slide gates and the repackaging of shredded wastes into containers.

The shredder has been designed with an absorbent feed system to minimize liquid release during the shredding process. The absorbent will be fed via an enclosed en-masse conveyor and through a rotary feeder into the shredder charge hopper. The shredder will also be equipped with a video camera mounted atop the shredder charge hopper. The shredder charge hopper, shredder, etc., can be viewed through this camera to aid in the operation, decontamination, or inspection of the shredding/ repackaging system.

Operation

The container shredding and repackaging system will be operated semiautomatically. To initiate the introduction of a container into the system, the shredder operator will activate a switch to start the shredder system. The following series of actions then occur:

- a container is placed onto the lift feed conveyor,
- the inlet airlock outer door opens,
- the container is lifted to the outer door,
- the container is conveyed through the outer door onto the airlock drum conveyor,
- the outer door closes,
- the inner door opens,
- the container is conveyed past the inner door into the shredder charge hopper and is shredded
- the inner door closes

In addition, the following conditions must be met before the control system will allow the shredder operator to start the shredder system :

- Both inlet airlock doors and both outlet airlock gates must be in the proper position and their respective purge cycles complete;

- The level of liquid in the hopper and receiving container, as detected by independent level indicators, must be below the high level alarm setting;

- The oxygen analyzer must indicate an acceptable oxygen concentration inside the shredder;

- The infrared detectors must not be activated;

- The pressure inside the shredder, as controlled by the nitrogen blanketing system, must be within range;

- The level of solids in the solids accumulation hopper, as detected by a level indicator, must not be too high;

- The nitrogen purge and fire suppression flood systems must be available for activation;

- The level of material in the absorbent accumulation tank, as detected by level indicators on the tank, must be above minimum level; and

- The shredder drive system must be in operation.

The absorbent feed into the shredder charge hopper is manually controlled by the shredder operator. Containers that are processed through the liquid decanting process with only partial liquid removal possible, such as sludges, will be identified by visual observation. When the shredder operator feeds such a container into the shredder, the operator will manually activate the absorbent feed system. This action will start the absorbent feed conveyor (and associated equipment), delivering absorbent into the shredder charge hopper. The absorbent feed system will automatically stop at the end of the associated time cycle (variable).

The packaging operation will, again, be primarily automatically controlled. The facility intends to use drums which meet the criterion of being visually clean for repackaging purposes; thus

there is little potential for contact between incompatible wastes, even if a liner were to tear. The liners themselves are made of low density polyethylene and provide excellent chemical resistance. The liners are disposable and are only used once, being incinerated along with the wastes.

Inspection, Monitoring, and Maintenance

There are a number of factors that are important to successful operation of the shredding system. These are:-

- maintaining a nitrogen purge
- monitoring and maintaining low oxygen levels
- monitoring for incipient ignition
- monitoring of shredded waste and liquid levels
- monitoring for roll reversals
- monitoring of shredder feed

Monitoring of the first five parameters is done by instruments associated with the shredding system. The monitoring of shredder feed is done visually. This inspection process will accomplish three major functions as described below:

- During the inspection process, containers of wastes with free liquids will be processed through a decanting station where free liquids are removed prior to shredding of the container

and any residual waste contents. Removal of free liquids will minimize the volume of potentially flammable vapors which might be generated within the shredding system.

- During the inspection process, any unshreddable items which might be discovered within a container can be removed.

- The container inspection process will also allow the shredding system operators to evaluate the volume of absorbent that will be required for a given batch of containers to be shredded. This predetermination will help assure that any free liquids generated during the shredding operation will be absorbed.

The container shredding system will be equipped with an automatic shut-off system designed to maintain its safe operation. If any of the parameters (except as noted - see footnotes in Table D-1-C.1) in Table D-1-C.1 go into alarm, the system is shut down.

The shredding system operator will be able to manually shut down the shredding system at any time. The operator can exercise the manual shutdown of the system if, in the operator's opinion and based on experience or visual/audible evidence the continued op-

eration of the shredder could present the threat of a spill, fire, explosion or other release.

After a manual shutdown, the shredding system cannot be placed back into operation until such time that all the conditions in Table D-1-C.1 are satisfied. In addition to these criteria, after an automatic shutdown, the condition causing the shutdown must be corrected and the resumption of shredding operations must be approved by the unit supervisor.

To avoid the time-consuming operation of disassembly of the shredder system components for routine inspection, the shredder will be equipped with an adjustable-view video camera. The video camera will be used to perform remote visual inspection of the shredding system while performing trouble shooting, maintenance and waste removal procedures. During normal shredding system operation, the video camera port will be purged with N_2 to keep the camera lens and shield plate clean. There will be no remote visual monitoring of shredding system operation below the shredder blades. The area below the shredder blades can be inspected for maintenance or waste removal purposes via removable hatches.

The shredder operation will be constantly monitored and con trolled via a series of instrument loops and a programmable logic controller (PLC). The control loops are shown on Dwg. 43-10-9-J03 (shts 1 and 2). The video camera will not be routinely used to monitor normal shredder operation. If the shredding operation encounters problems, such as repeated reversals of the blades, the video camera could be used, in a troubleshooting mode, to try and identify the cause of the problem.

The low-speed shredder is an inherently low maintenance machine. The only major maintenance item anticipated is the replacement of some cutter teeth every two (2) to three (3) years or more. This type of maintenance will be a fairly major undertaking requiring partial shredder dismantling. Other preventative maintenance and inspection programs (e.g., lubrication) will be performed per the manufacturer's specifications. A maintenance port, located above the rotary valve on the free liquids holding chamber, is provided to facilitate maintenance activities associated with the rotary valve. Maintenance of the drive system can be performed external to the shredder itself.

Remote monitoring of the shredder system operation will primarily be performed (as described in "Operation") by a process control

system designed and programmed for that purpose. However, the shredder system operator has the capability to manually operate the system and shut down or discontinue operations if necessary.

A complete internal visual inspection of the shredding system will occur during scheduled preventative maintenance (once per year); when the shredding of containers containing wastes which are incompatible with previously shredded wastes is scheduled; or when the shredder blades and/or cutter teeth themselves need replacing (expected every 2 -3 years). The waste removal procedure previously described will be implemented at these times.

The complete internal visual inspection of the shredding system will, at a minimum, include the items shown in Table D-1-C.2. Video inspections of the shredder will occur at least once per week.

Prior to the removal of the container shredding/repackaging system from operation, or before processing a batch of incompatible waste, a two-step procedure will be used to remove shredded waste from the system. First, absorbent material will be introduced into the shredder to aid in the removal of a large percentage of residual sticky or sludgy wastes which may have adhered to the internal

surfaces. These wastes will be removed from the system via the normal operational route through the slide gates. Inspection of the system, via the video camera, will be performed to insure that the initial waste removal step is satisfactory. In the second step of the waste removal procedure, the nitrogen system will be physically isolated, the shredded solids slide gates will be opened, and the liquids discharge rotary valve will be activated while the shredding system is thoroughly washed with high pressure water introduced through the inspection/maintenance hatches. This washing process will continue until the shredding system is visually clean. Wash water will be collected in containers, analyzed and transferred to the aqueous waste storage tanks.

The atmosphere within the shredding system will be monitored and controlled via two mechanisms. First of all, the pressure within the shredding system will be monitored (PSL-011, PAL-011, PSH-186, PAH-186) and controlled (PCV-146, PCV-148, PCV-150, PCV-152, PCV-154) to insure the nitrogen pressure is within limits. Secondly, the concentration of oxygen within the shredder will be monitored (AE-037), and the shredding operation will be automatically shutdown if the oxygen concentration exceeds 6 percent. Detection of an excess oxygen concentration will also trigger a high volume nitrogen purge of the system.

Ventilation and Emissions Control Systems

As previously discussed, the shredding/repackaging system in Unit 102 is a totally enclosed operation which will virtually eliminate fugitive emissions of VOCs or particulates. The shredding operation itself, as depicted in detail on Dwg. 43-10-7-J01, will be blanketed with nitrogen, and during each cycle, the volume between the inner and outer slide gates will be purged with an additional volume of nitrogen. It is anticipated that this blanketing and purging will require approximately 200 cfm of nitrogen which will provide approximately six (6) volume exchanges per hour within the shredding unit. This process is designed to minimize the concentrations of oxygen and potentially explosive vapors present within the shredder unit. This nominal 200 cfm of nitrogen will be vented, through a carbon steel line equipped with a flame arrestor, to the carbon adsorption units at the organic decant tank farm (ref. Dwg. 43-10-9-J02). These carbon adsorption units are designed to remove an average of ninety-five (95)% of hydrocarbons in the incoming vapor stream.

The container repackaging and liquid collection operations of the shredding system are also designed to minimize fugitive emissions. The liquid collection system is a closed system that would minimize fugitive hydrocarbon emissions. The design of this system provides

for the use of a rotary air lock to discharge liquids from the shredder and an airtight flexible connection from the air lock to the collection container.

Additionally, liquids generation rate and container changeout frequency are expected to be very low due to the practice of decanting and the ability to add absorbent to the shredder.

During repackaging, there will be a very brief time when the container full of shredded solids is open. This time will, however, be minimal since an operator will be required to close off the liners with twist ties, in much the same manner as a household garbage bag, or place a plastic cover, much like a "shower cap" over the head of the drum. Even though Unit 102 is permitted for container storage, should interruptions to incinerator operations occur, the facility intends to return repackaged drums to storage in Unit 101, in which case the drums will be capped with a rigid lid.

The atmosphere in the shredding/repackaging section of the building will be exhausted at a rate to produce a minimum of four (4) volume changes per hour to prevent the accumulation of potentially toxic or explosive vapors in this area. This building exhaust rate is

anticipated to be approximately 30,000 cfm, which will be exhausted directly to the ambient surroundings.

The only other potential emission in the shredding/repackaging operation is the dusting created by handling of some absorbent materials in TK-045 and associated handling equipment. TK-045 and its enclosed pneumatic feed line and discharge en-masse conveyors will, however, be vented to a common baghouse dust collector. This baghouse has been designed to provide a nominal 4.21 to 1 air to cloth ratio and will operate during all loading, unloading or transfer operations. The baghouse will contain more than 100 square feet of cloth area and will be capable of removing 99.9% of the particulate contaminants from the incoming air stream under normal conditions.

Table D-1-C.1
Container Shredding/Repackaging Unit
Shutdown Setpoints

Parameter	Loop No.	Shutdown
Oxygen Conc.	AE-037	> 6%
Low N2 Supply Press.	PSL-159	< 55 psig
Low Shredder Press.	PSL-011	< - 1 inch wc
High Shredder Press.	PSH-186	> 1 psig
IR Detector	AE-038	Activated
Low fire suppression system press	PSL-187	90 psig
High Solids Level[1]	LSH-039	@ 18" above gate
High Liquids Level[1]	LSH-035	@ 12" above valve
Low Absorbent Tank Level[1]	LAL-010	@ 12" above cone
High Liquids Level[1] (Receiving Container)	LSH-092	@ 2" below rim
Inlet Air Lock[1]		Both gates open
Outlet Air Lock[1]		Both gates open

[1] Prevents feeding of containers

Table D-1-C.2
Container Shredding/Repackaging Unit
Internal Inspection

Inspection Point	Potential Problems
Shredder Teeth	Chipping or Breakage
Inspection Doors	Gasket Degradation
Internal Steel	Cracking/Corrosion
Slide Gates	Gasket Degradation
Rotary Airlock	Wiper Degradation
Flange and Assembly Bolts	Cracking/Corrosion
Plate	Blinding/Pluggage
Breaker Bar	Blinding/Pluggage
Nitrogen Inlet Couplings	Cracking/Blockage
Oxygen Detector Line	Cracking/Blockage
Infrared Detector	Dirt Buildup